

WHAT IS CLAIMED IS:

1. A method for generating menu/toolbar entities on a graphical user interface, comprising the steps of:

providing an application which can be displayed in a frame of a graphical user interface, the application having a corresponding set of menu/toolbar entities, the application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of the application being contained in a data file, each application state characteristic defining a display characteristic of at least one of the set of menu/toolbar entities; and

generating a displayed set of menu/toolbar entities on the graphical user interface based upon the application state characteristic of a current one of the application states of the application.

2. A method for generating menu/toolbar entities on a graphical user interface having a parent frame for displaying menu/toolbar items and a plurality of child frames, comprising the steps of:

providing a set of applications which can be displayed in the plurality of child frames, each application having a corresponding set of menu/toolbar entities, each application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of each application being contained in a data file, each application state characteristic defining a display characteristic of at least one of the set of menu/toolbar entities; and

generating a displayed set of menu/toolbar entities on the graphical user interface based upon the application state characteristic of a current one of the application states of a currently focused one of the applications.

3. The method of claim 2, wherein each application has a corresponding data file.

4. The method of claim 1, wherein the display characteristic is one of an enabled menu/toolbar entity and a disabled menu/toolbar entity.

5. The method of claim 4, wherein the data file includes text in a format of

<state specification><property>=<item,item,item...>, wherein a state specification field identifies the application state, the item field identifies the menu/toolbar entities which are modified, and the property field indicates whether the application state enables or disables the menu/toolbar entities.

6. The method of claim 5, wherein the menu/toolbar entities include menu items and toolbar items.

7. The method of claim 1, wherein the application states include a plurality of states and a plurality of state parts, and wherein the application can, at any given time, be in one of the plurality of states and in zero or more of the plurality of state parts.

8. A method of configuring a plurality of menu/toolbar entities for an application comprising the steps of:

selecting a plurality of states for an application, the application having associated therewith a plurality of menu/toolbar entities for displaying on a graphical user interface;

selecting a state characteristic for each state, the state characteristic defining characteristics of a plurality of menu/toolbar entities of the application based on the state, information defining the state characteristics being stored in a data file;

entering the application into a current one of the plurality of states; and

applying the state characteristic of the current state of the application to the plurality of menu/toolbar entities displayed on a graphical user interface, based upon the information in the data file.

9. A method of configuring a plurality of menu/toolbar entities for an application comprising the steps of:

selecting a first plurality of states for an application, the application having associated therewith a plurality of menu/toolbar entities for displaying on a graphical user interface;

selecting a second plurality of state parts, each state part being associated with one or more of the plurality of states.

selecting a state characteristic for each state and each state part, the state characteristic defining characteristics of a plurality of menu/toolbar entities of the application based on the state, information defining the state characteristics being stored in a data file;

entering the application into a current one of the plurality of states;

applying the state characteristic of the current state of the application to the plurality of menu/toolbar entities displayed on a graphical user interface, based upon the information in the data file;

entering the application into a current one of the plurality of state parts for the current state;

applying the state characteristic of the current state part to the plurality of menu/toolbar entities displayed on a graphical user interface, based upon the information in the data file.

10. The method as recited in claim 8 wherein the state further comprises a sub-state.

11. The method as recited in claim 8 wherein the state further comprises a state part.

12. The method as recited in claim 8 wherein the state is a base state.

13. The method as recited in claim 9 wherein the state is a base state.

14. The method as recited in claim 8 wherein the step of entering further comprises pushing the state on a stack.
15. The method as recited in claim 10 wherein the step of entering further comprises pushing the sub-state on a stack.
16. The method as recited in claim 11 wherein the step of entering further comprises adding the state part to a current state on a stack.
17. The method of claim 9, further comprising entering a new current one of the plurality of states;
deapplying the state characteristics of the current state and current state part;
and
applying the state characteristic of the new current state of the application to the plurality of menu/toolbar entities displayed on the graphical user interface, based upon the information in the data file.
18. The method of claim 17, wherein the step of deapplying further comprises popping the current state and current state part from a stack, and wherein the step of applying further comprises pushing the new current state on the stack.
19. A method for generating menu/toolbar entities on a graphical user interface having a parent frame for displaying menu/toolbar items and a plurality of child frames, comprising the steps of:
providing a set of applications which can be displayed in the plurality of child frames, each application having a corresponding set of menu/toolbar entities, information indicative of a policy for each menu/toolbar entity of each application being contained in a data file, each application being in one of a respective plurality of application states at any given time, information indicative of an application state

characteristic for each application state of each application being contained in the data file, each application state characteristic defining a display characteristic of at least one of the set of menu/toolbar entities; and

generating a displayed set of menu/toolbar entities on the graphical user interface based upon the policies of the menu/toolbar entities for a currently focused one of the applications and upon the application state characteristic of a current one of the application states of the currently focused application.

20. The method of claim 19, wherein each application has a corresponding data file.

21. The method of claim 19, wherein the providing step further includes selecting the policy for each menu/tool bar entity from a set of policies and placing information indicative of the policy into the data file, the set of policies including a replace policy and an append policy, each menu/toolbar entity having an identifier, and wherein

the generating step includes, for each menu/toolbar entity in an application gaining focus, comparing the identifier of the menu/toolbar entity to the identifier of each menu/toolbar entity in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched menu/toolbar entity of the current set of menu/toolbar entities with the matched menu/toolbar entity of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu/toolbar entity of the application gaining focus is the replace policy;

adding the matched menu/toolbar entity of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu/toolbar entity of the application gaining focus is the append policy.

22. The method of claim 19, wherein the set of menu/toolbar entities includes a toolbar having a set of toolbar items, and a menu bar having a set of menus, each menu having a corresponding set of menu items, and wherein the menu bar, the toolbar, each menu,

each menu item, and each toolbar item each have a respective policy.

23. The method of claim 21, wherein the providing step further includes

selecting the respective policy for each menu from a set of policies and placing information indicative of the policy into the data file, the set of policies including a merge policy, a replace policy and an append policy, each menu having an identifier, and wherein

the generating step includes, for each menu in an application gaining focus, comparing the identifier of the menu bar to the identifier of each menu in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched menu of the current set of menu/toolbar entities with the matched menu of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu of the application gaining focus is the replace policy;

adding the matched menu of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu of the application gaining focus is the append policy; and

generating the displayed set of menu/toolbar entities on the graphical user interface based upon the policies of the menu items of the matched menu of the application gaining focus, when the policy of the matched menu of the application gaining focus is the merge policy.

24. The method of claim 22, wherein the providing step further includes

selecting the respective policy for each tool bar from a set of policies and placing information indicative of the policy into the data file, the set of policies including a merge policy, a replace policy and an append policy, each tool bar having an identifier, and wherein

the generating step includes, for each tool bar in an application gaining focus, comparing the identifier of the menu bar to the identifier of each tool bar in a current

set of menu/toolbar entities, and, upon finding a match:

replacing the matched tool bar of the current set of menu/toolbar entities with the matched tool bar of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched tool bar of the application gaining focus is the replace policy;

adding the matched tool bar of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched tool bar of the application gaining focus is the append policy; and

generating the displayed set of menu/toolbar entities on the graphical user interface based upon the policies of the tool bar items of the matched tool bar of the application gaining focus, when the policy of the matched tool bar of the application gaining focus is the merge policy.

25. The method of claim 23, further comprising the steps of, when the matched menu bar has the merge policy:

selecting the respective policy for each menu item from a set of policies and placing information indicative of the policy into the data file, the set of policies including a replace policy and an append policy, each menu item having an identifier, and wherein

the generating step includes, for each menu item in an application gaining focus, comparing the identifier of the menu item to the identifier of each menu bar in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched menu item of the current set of menu/toolbar entities with the matched menu item of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu item of the application gaining focus is the replace policy;

adding the matched menu item of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu item of the application gaining focus is the append policy.

26. The method of claim 25, further comprising the steps of, when the matched tool bar has the merge policy:

selecting the respective policy for each tool bar item from a set of policies and placing information indicative of the policy into the data file, the set of policies including a replace policy and an append policy, each tool bar item having an identifier, and wherein

the generating step includes, for each tool bar item in an application gaining focus, comparing the identifier of the tool bar item to the identifier of each tool bar item in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched tool bar item of the current set of menu/toolbar entities with the matched tool bar item of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched tool bar item of the application gaining focus is the replace policy;

adding the matched tool bar item of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched tool bar item of the application gaining focus is the append policy.

27. The method of claim 19, wherein the generating step includes the steps of:

monitoring an event queue for one of a create event, a destroy event, and a focus event;

upon detecting a create event, creating a JAVA container corresponding to an application which caused the create event using the information indicative of the policies of the application from the data file corresponding to the application;

upon detecting a gain focus event, applying the policies of an application gaining focus based upon information contained in the JAVA container for the application gaining focus;

upon detecting a lose focus event, deapplying the policies of an application losing focus based upon information contained in the JAVA container for the

application losing focus; and

upon detecting a destroy event, destroying the JAVA containing corresponding to an application which caused the destroy event.

28. The method of claim 22, wherein the providing step further includes

selecting the respective policy for each menu bar from a set of policies and placing information indicative of the policy into the data file, the set of policies including a merge policy, a replace policy and an append policy, each menu bar having an identifier, and wherein

the generating step includes, for each menu bar in an application gaining focus, comparing the identifier of the menu bar to the identifier of each menu in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched menu bar of the current set of menu/toolbar entities with the matched menu bar of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu bar of the application gaining focus is the replace policy;

adding the matched menu bar of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu bar of the application gaining focus is the append policy; and

generating the displayed set of menu/toolbar entities on the graphical user interface based upon the policies of the menus of the matched menu bar of the application gaining focus, when the policy of the matched menu bar of the application gaining focus is the merge policy.

29. The method of claim 19, wherein the display characteristic is one of an enabled menu/toolbar entity and a disabled menu/toolbar entity.

30. The method of claim 29, wherein the data file includes text in a format of

<state specification><property>=<item,item,item...>, wherein a state specification field identifies the application state, the item field identifies the menu/toolbar entities which are modified, and the property field indicates whether the application state enables or disables the menu/toolbar entities.

31. The method of claim 30, wherein the menu/toolbar entities include menu items and toolbar items.

32. The method of claim 19, wherein the application states include a plurality of states and a plurality of state parts, and wherein each application can, at any given time, be in one of the plurality of states and in zero or more of the plurality of state parts.

33. The method of claim 2, wherein the display characteristic is one of an enabled menu/toolbar entity and a disabled menu/toolbar entity.

34. The method of claim 33, wherein the data file includes text in a format of

<state specification><property>=<item,item,item...>, wherein a state specification field identifies the application state, the item field identifies the menu/toolbar entities which are modified, and the property field indicates whether the application state enables or disables the menu/toolbar entities.

35. The method of claim 34, wherein the menu/toolbar entities include menu items and toolbar items.

36. The method of claim 2, wherein the application states include a plurality of states and a plurality of state parts, and wherein the application can, at any given time, be in one of the plurality of states and in zero or more of the plurality of state parts.

37. A computer-readable medium, having stored thereon, computer executable process steps operative to control a computer to generate menu/toolbar entities on a graphical user interface having a parent frame for displaying menu/toolbar items and a plurality of child frames, the steps comprising:

providing a set of applications which can be displayed in the plurality of child frames, each application having a corresponding set of menu/toolbar entities, information indicative of a policy for each menu/toolbar entity of each application being contained in a data file, each application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of each application being contained in the data file, each application state characteristic defining a display characteristic of at least one of the set of menu/toolbar entities; and

generating a displayed set of menu/toolbar entities on the graphical user interface based upon the policies of the menu/toolbar entities for a currently focused one of the applications and upon the application state characteristic of a current one of the application states of the currently focused application.

38. The computer readable medium of claim 37, wherein each application has a corresponding data file.

39. The computer readable medium of claim 37, wherein the providing step further includes selecting the policy for each menu/tool bar entity from a set of policies and placing information indicative of the policy into the data file, the set of policies including a replace policy and an append policy, each menu/toolbar entity having an identifier, and wherein

the generating step includes, for each menu/toolbar entity in an application gaining focus, comparing the identifier of the menu/toolbar entity to the identifier of each menu/toolbar entity in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched menu/toolbar entity of the current set of menu/toolbar entities with the matched menu/toolbar entity of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu/toolbar entity of the application gaining focus is the replace policy;

adding the matched menu/toolbar entity of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu/toolbar entity of the application gaining focus is the append policy.

40. The computer readable medium of claim 37, wherein the set of menu/toolbar entities includes a toolbar having a set of toolbar items, and a menu bar having a set of menus, each menu having a corresponding set of menu items, and wherein the menu bar, the toolbar, each menu, each menu item, and each toolbar item each have a respective policy.

41. The computer readable medium of claim 40, wherein the providing step further includes

selecting the respective policy for each menu from a set of policies and placing information indicative of the policy into the data file, the set of policies including a merge policy, a replace policy and an append policy, each menu having an identifier, and wherein

the generating step includes, for each menu in an application gaining focus, comparing the identifier of the menu bar to the identifier of each menu in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched menu of the current set of menu/toolbar entities with the matched menu of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu of the application gaining focus is the replace policy;

adding the matched menu of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu of the

application gaining focus is the append policy; and

generating the displayed set of menu/toolbar entities on the graphical user interface based upon the policies of the menu items of the matched menu of the application gaining focus, when the policy of the matched menu of the application gaining focus is the merge policy.

42. The computer readable medium of claim 41, wherein the providing step further includes

selecting the respective policy for each tool bar from a set of policies and placing information indicative of the policy into the data file, the set of policies including a merge policy, a replace policy and an append policy, each tool bar having an identifier, and wherein

the generating step includes, for each tool bar in an application gaining focus, comparing the identifier of the menu bar to the identifier of each tool bar in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched tool bar of the current set of menu/toolbar entities with the matched tool bar of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched tool bar of the application gaining focus is the replace policy;

adding the matched tool bar of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched tool bar of the application gaining focus is the append policy; and

generating the displayed set of menu/toolbar entities on the graphical user interface based upon the policies of the tool bar items of the matched tool bar of the application gaining focus, when the policy of the matched tool bar of the application gaining focus is the merge policy.

43. The computer readable medium of claim 42, further comprising the steps of, when the matched menu bar has the merge policy:

selecting the respective policy for each menu item from a set of policies and placing information indicative of the policy into the data file, the set of policies including a replace policy and an append policy, each menu item having an identifier, and wherein

the generating step includes, for each menu item in an application gaining focus, comparing the identifier of the menu item to the identifier of each menu bar in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched menu item of the current set of menu/toolbar entities with the matched menu item of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu item of the application gaining focus is the replace policy;

adding the matched menu item of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu item of the application gaining focus is the append policy.

44. The computer readable medium of claim 43, further comprising the steps of, when the matched tool bar has the merge policy:

selecting the respective policy for each tool bar item from a set of policies and placing information indicative of the policy into the data file, the set of policies including a replace policy and an append policy, each tool bar item having an identifier, and wherein

the generating step includes, for each tool bar item in an application gaining focus, comparing the identifier of the tool bar item to the identifier of each tool bar item in a current set of menu/toolbar entities, and, upon finding a match:

replacing the matched tool bar item of the current set of menu/toolbar entities with the matched tool bar item of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched tool bar item of the application gaining focus is the replace policy;

adding the matched tool bar item of the application gaining focus to the

displayed set of menu/toolbar entities when the policy of the matched tool bar item of the application gaining focus is the append policy.

45. The computer readable medium of claim 37, wherein the generating step includes the steps of:

- monitoring an event queue for one of a create event, a destroy event, and a focus event;

- upon detecting a create event, creating a JAVA container corresponding to an application which caused the create event using the information indicative of the policies of the application from the data file corresponding to the application;

- upon detecting a gain focus event, applying the policies of an application gaining focus based upon information contained in the JAVA container for the application gaining focus;

- upon detecting a lose focus event, deapplying the policies of an application losing focus based upon information contained in the JAVA container for the application losing focus; and

- upon detecting a destroy event, destroying the JAVA containing corresponding to an application which caused the destroy event.

46. The computer readable medium of claim 40, wherein the providing step further includes

- selecting the respective policy for each menu bar from a set of policies and placing information indicative of the policy into the data file, the set of policies including a merge policy, a replace policy and an append policy, each menu bar having an identifier, and wherein

- the generating step includes, for each menu bar in an application gaining focus, comparing the identifier of the menu bar to the identifier of each menu in a current set of menu/toolbar entities, and, upon finding a match:

- replacing the matched menu bar of the current set of menu/toolbar

entities with the matched menu bar of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu bar of the application gaining focus is the replace policy;

adding the matched menu bar of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu bar of the application gaining focus is the append policy; and

generating the displayed set of menu/toolbar entities on the graphical user interface based upon the policies of the menus of the matched menu bar of the application gaining focus, when the policy of the matched menu bar of the application gaining focus is the merge policy.

47. The computer readable medium of claim 37, wherein the display characteristic is one of an enabled menu/toolbar entity and a disabled menu/toolbar entity.

48. The computer readable medium of claim 47, wherein the data file includes text in a format of

<state specification><property>=<item,item,item...>, wherein a state specification field identifies the application state, the item field identifies the menu/toolbar entities which are modified, and the property field indicates whether the application state enables or disables the menu/toolbar entities.

49. The computer readable medium of claim 48, wherein the menu/toolbar entities include menu items and toolbar items.

50. The computer readable medium of claim 37, wherein the application states include a plurality of states and a plurality of state parts, and wherein each application can, at any given time, be in one of the plurality of states and in zero or more of the plurality of state parts.

51. A computer readable medium, having stored thereon, computer executable process steps operative to control a computer to generate menu/toolbar entities on a graphical user interface, comprising:

providing an application which can be displayed in a frame of a graphical user interface, the application having a corresponding set of menu/toolbar entities, the application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of the application being contained in a data file, each application state characteristic defining a display characteristic of at least one of the set of menu/toolbar entities; and

generating a displayed set of menu/toolbar entities on the graphical user interface based upon the application state characteristic of a current one of the application states of the application.

52. A computer readable medium, having stored thereon, computer executable process steps operative to control a computer to generate menu/toolbar entities on a graphical user interface having a parent frame for displaying menu/toolbar items and a plurality of child frames, comprising the steps of:

providing a set of applications which can be displayed in the plurality of child frames, each application having a corresponding set of menu/toolbar entities, each application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of each application being contained in a data file, each application state characteristic defining a display characteristic of at least one of the set of menu/toolbar entities; and

generating a displayed set of menu/toolbar entities on the graphical user interface based upon the application state characteristic of a current one of the application states of a currently focused one of the applications.

53. The computer readable medium of claim 52, wherein each application has a

corresponding data file.

54. The computer readable medium of claim 51, wherein the display characteristic is one of an enabled menu/toolbar entity and a disabled menu/toolbar entity.

55. The computer readable medium of claim 54, wherein the data file includes text in a format of

<state specification><property>=<item,item,item...>, wherein a state specification field identifies the application state, the item field identifies the menu/toolbar entities which are modified, and the property field indicates whether the application state enables or disables the menu/toolbar entities.

56. The computer readable medium of claim 55, wherein the menu/toolbar entities include menu items and toolbar items.

57. The computer readable medium of claim 1, wherein the application states include a plurality of states and a plurality of state parts, and wherein the application can, at any given time, be in one of the plurality of states and in zero or more of the plurality of state parts.

58. A computer readable medium, having stored thereon, computer executable process steps, operative to control a computer to configure a plurality of menu/toolbar entities for an application, comprising:

selecting a plurality of states for an application, the application having associated therewith a plurality of menu/toolbar entities for displaying on a graphical user interface;

selecting a state characteristic for each state, the state characteristic defining characteristics of a plurality of menu/toolbar entities of the application based on the state, information defining the state characteristics being stored in a data file;

entering the application into a current one of the plurality of states; and
applying the state characteristic of the current state of the application to the plurality of menu/toolbar entities displayed on a graphical user interface, based upon the information in the data file.

59. A computer readable medium, having stored thereon, computer executable process steps, operative to control a computer to configure a plurality of menu/toolbar entities for an application, comprising :

selecting a first plurality of states for an application, the application having associated therewith a plurality of menu/toolbar entities for displaying on a graphical user interface;

selecting a second plurality of state parts, each state part being associated with one or more of the plurality of states.

selecting a state characteristic for each state and each state part, the state characteristic defining characteristics of a plurality of menu/toolbar entities of the application based on the state, information defining the state characteristics being stored in a data file;

entering the application into a current one of the plurality of states;

applying the state characteristic of the current state of the application to the plurality of menu/toolbar entities displayed on a graphical user interface, based upon the information in the data file;

entering the application into a current of the plurality of state parts for the current state;

applying the state characteristic of the current state part to the plurality of menu/toolbar entities displayed on a graphical user interface, based upon the information in the data file.

60. The computer readable medium as recited in claim 58 wherein the state further comprises a sub-state.

61. The computer readable medium as recited in claim 58 wherein the state further comprises a state part.

62. The computer readable medium as recited in claim 58 wherein the state is a base state.

63. The computer readable medium as recited in claim 59 wherein the state is a base state.

64. The computer readable medium as recited in claim 58 wherein the step of entering further comprises pushing the state on a stack.

65. The computer readable medium as recited in claim 60 wherein the step of entering further comprises pushing the sub-state on a stack.

66. The computer readable medium as recited in claim 61 wherein the step of entering further comprises pushing the state part on a stack.

67. The computer readable medium of claim 59, further comprising entering a new current one of the plurality of states;

deapplying the state characteristics of the current state and current state part;

and

applying the state characteristic of the new current state of the application to the plurality of menu/toolbar entities displayed on the graphical user interface, based upon the information in the data file.

68. The computer readable medium of claim 67, wherein the step of deapplying further comprises popping the current state and current state part from a stack, and wherein the

step of applying further comprises pushing the new current state on the stack.

69. A system for generating menu/toolbar entities on a graphical user interface having a parent frame for displaying menu/toolbar items and a plurality of child frames, comprising:

- a display device for displaying the graphical user interface;

- a computer processor coupled to a memory;

- a set of applications stored in the memory which can be displayed in the plurality of child frames on the display device, each application having a corresponding set of menu/toolbar entities, information indicative of a policy for each menu/toolbar entity of each application being contained in a data file, each application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of each application being contained in the data file, each application state characteristic defining a display characteristic of at least one of the set of menu/toolbar entities; and

- the computer processor generating a displayed set of menu/toolbar entities on the graphical user interface based upon the policies of the menu/toolbar entities for a currently focused one of the applications and upon the application state characteristic of a current one of the application states of the currently focused application.

70. The system of claim 69, wherein each application has a corresponding data file.

71. The system of claim 70, wherein the policy for each menu/tool bar entity is selected from a set of policies and placing information indicative of the policy into the data file, the set of policies including a replace policy and an append policy, each menu/toolbar entity having an identifier, and wherein

- the computer processor, for each menu/toolbar entity in an application gaining focus, compares the identifier of the menu/toolbar entity to the identifier of each menu/toolbar entity in a current set of menu/toolbar entities, and, upon finding a match:

replaces the matched menu/toolbar entity of the current set of menu/toolbar entities with the matched menu/toolbar entity of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu/toolbar entity of the application gaining focus is the replace policy; and

adds the matched menu/toolbar entity of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu/toolbar entity of the application gaining focus is the append policy.

72. The system of claim 69, wherein the set of menu/toolbar entities includes a toolbar having a set of toolbar items, and a menu bar having a set of menus, each menu having a corresponding set of menu items, and wherein the menu bar, the toolbar, each menu, each menu item, and each toolbar item each have a respective policy.

73. The system of claim 72, wherein the respective policy for each menu is selected from a set of policies and placing information indicative of the policy into the data file, the set of policies including a merge policy, a replace policy and an append policy, each menu having an identifier, and wherein

the computer processor, for each menu in an application gaining focus, compares the identifier of the menu bar to the identifier of each menu in a current set of menu/toolbar entities, and, upon finding a match:

replaces the matched menu of the current set of menu/toolbar entities with the matched menu of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu of the application gaining focus is the replace policy;

adds the matched menu of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu of the application gaining focus is the append policy; and

generates the displayed set of menu/toolbar entities on the graphical user interface on the display device based upon the policies of the menu items of the

matched menu of the application gaining focus, when the policy of the matched menu of the application gaining focus is the merge policy.

74. The system of claim 73, wherein the respective policy for each tool bar is selected from a set of policies and placing information indicative of the policy into the data file, the set of policies including a merge policy, a replace policy and an append policy, each tool bar having an identifier, and wherein

the computer processor, for each tool bar in an application gaining focus, compares the identifier of the menu bar to the identifier of each tool bar in a current set of menu/toolbar entities, and, upon finding a match:

replaces the matched tool bar of the current set of menu/toolbar entities with the matched tool bar of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched tool bar of the application gaining focus is the replace policy;

adds the matched tool bar of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched tool bar of the application gaining focus is the append policy; and

generates the displayed set of menu/toolbar entities on the graphical user interface on the display device based upon the policies of the tool bar items of the matched tool bar of the application gaining focus, when the policy of the matched tool bar of the application gaining focus is the merge policy.

75. The system of claim 74, wherein, when the matched menu bar has the merge policy, a respective policy for each menu item is selected from a set of policies and information indicative of the policy placed into the data file, the set of policies including a replace policy and an append policy, each menu item having an identifier, and wherein

the computer processor, for each menu item in an application gaining focus, compares the identifier of the menu item to the identifier of each menu bar in a current

set of menu/toolbar entities, and, upon finding a match:

replaces the matched menu item of the current set of menu/toolbar entities with the matched menu item of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched menu item of the application gaining focus is the replace policy;

adds the matched menu item of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched menu item of the application gaining focus is the append policy.

76. The system of claim 75, wherein, when the matched tool bar has the merge policy, a respective policy is selected for each tool bar item from a set of policies and information indicative of the policy is placed into the data file, the set of policies including a replace policy and an append policy, each tool bar item having an identifier, and wherein

the computer processor, for each tool bar item in an application gaining focus, compares the identifier of the tool bar item to the identifier of each tool bar item in a current set of menu/toolbar entities, and, upon finding a match:

replaces the matched tool bar item of the current set of menu/toolbar entities with the matched tool bar item of the application gaining focus in the displayed set of menu/toolbar entities when the policy of the matched tool bar item of the application gaining focus is the replace policy;

adds the matched tool bar item of the application gaining focus to the displayed set of menu/toolbar entities when the policy of the matched tool bar item of the application gaining focus is the append policy.

77. A system for generating menu/toolbar entities on a graphical user interface, comprising:

- a display device for displaying the graphical user interface;
- a computer processor coupled to a memory;

an application which can be displayed in a frame of a graphical user interface, the application having a corresponding set of menu/toolbar entities, the application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of the application being contained in a data file, each application state characteristic defining a display characteristic of at least one of the set of menu/toolbar entities;

the computer processor generating a displayed set of menu/toolbar entities on the graphical user interface on the display device based upon the application state characteristic of a current one of the application states of the application.

78. A system for generating menu/toolbar entities on a graphical user interface having a parent frame for displaying menu/toolbar items and a plurality of child frames, comprising:

a display device for displaying the graphical user interface;

a computer processor coupled to a memory;

a set of applications which can be displayed in the plurality of child frames, each application having a corresponding set of menu/toolbar entities, each application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of each application being contained in a data file, each application state characteristic defining a display characteristic of at least one of the set of menu/toolbar entities; and

the computer processor generating a displayed set of menu/toolbar entities on the graphical user interface based upon the application state characteristic of a current one of the application states of a currently focused one of the applications.

79. A method for altering an input entity on a graphical user interface, comprising providing, in a data file, information indicative of a corresponding set of input entities for each of a plurality of system conditions; and

generating a displayed set of input entities based upon a current system

condition.

80. The method of claim 79, wherein the plurality of system conditions include an application gaining focus.

81. The method of claim 79, wherein the plurality of system conditions include an application state.

82. The method of claim 79, wherein the plurality of input entities include menu/toolbar entities.

83. The method of claim 79, wherein the plurality of input entities include checkbox elements.

84. A method for generating menu/toolbar entities on a graphical user interface, comprising the steps of:

providing an application which can be displayed in a frame of a graphical user interface, the application having a corresponding set of input entities, the application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of the application being contained in a data file, each application state characteristic defining a display characteristic of at least one of the set of input entities; and

generating a displayed set of input entities on the graphical user interface based upon the application state characteristic of a current one of the application states of the application.

85. The method of claim 84, wherein the set of input entities include menu/toolbar entities.

86. The method of claim 79, wherein the set of input entities include checkbox elements.

87. A method for generating menu/toolbar entities on a graphical user interface having a parent frame for displaying menu/toolbar items and a plurality of child frames, comprising the steps of:

providing a set of applications which can be displayed in the plurality of child frames, each application having a corresponding set of input entities, each application being in one of a respective plurality of application states at any given time, information indicative of an application state characteristic for each application state of each application being contained in a data file, each application state characteristic defining a display characteristic of at least one of the set of input entities; and

generating a displayed set of input entities on the graphical user interface based upon the application state characteristic of a current one of the application states of a currently focused one of the applications.

88. The method of claim 87, wherein each application has a corresponding data file.

89. The method of claim 87, wherein the set of input entities include checkbox elements.

90. The method of claim 88, wherein the data file includes text in a format of

<state specification><property>=<item,item,item...>, wherein a state specification field identifies the application state, the item field identifies the menu/toolbar entities which are modified, and the property field indicates whether the application state enables or disables the input entities.

91. A method of configuring a plurality of input entities for an application comprising

the steps of:

- selecting a plurality of states for an application, the application having associated therewith a plurality of input entities for displaying on a graphical user interface;

- selecting a state characteristic for each state, the state characteristic defining characteristics of a plurality of input entities of the application based on the state, information defining the state characteristics being stored in a data file;

- entering the application into a current one of the plurality of states; and

- applying the state characteristic of the current state of the application to the plurality of input entities displayed on a graphical user interface, based upon the information in the data file.

92. A method of configuring a plurality of input entities for an application comprising the steps of:

- selecting a first plurality of states for an application, the application having associated therewith a plurality of input entities for displaying on a graphical user interface;

- selecting a second plurality of state parts, each state part being associated with one or more of the plurality of states.

- selecting a state characteristic for each state and each state part, the state characteristic defining characteristics of a plurality of input entities of the application based on the state, information defining the state characteristics being stored in a data file;

- entering the application into a current one of the plurality of states;

- applying the state characteristic of the current state of the application to the plurality of input entities displayed on a graphical user interface, based upon the information in the data file;

- entering the application into a current one of the plurality of state parts for the current state;

applying the state characteristic of the current state part to the plurality of input entities displayed on a graphical user interface, based upon the information in the data file.

For Review